17. May 2018

Marlene H. Dortch,
Secretary Federal Communications Commission
445 12th Street, SW Room TWA325
Washington, DC 20554
VIA ELECTRONIC DELIVERY

Re: Comment
ET Docket No. 13-49, Revision of Part 15 of the Commission's Rules to Permit Unlicensed National Information Infrastructure (U-NII) Devices in the 5 GHz Band

Dear Ms. Dortch:

I write in regard to the above-captioned proceeding on behalf of Autotalks, a leading international designer/manufacturer of connected car technologies. For over a decade, Autotalks has worked cooperatively with numerous public and private entities to enhance roadway safety through the development and deployment of a standardized, universally-accepted vehicle-to-vehicle (V2V) communications platform predicated primarily on Dedicated Short Range Communications (DSRC) technology.

We have worked closely with auto manufacturers and transportation officials at every level of government, both in the U.S. and internationally, throughout the painstaking design, planning, testing and fielding stages of a vehicle-to-everything (V2X) communications infrastructure.[1] As the Federal Communication Commission (FCC) considers proposals to bifurcate or otherwise share the 5.9 GHz spectrum with WiFi and considers examination of cellular vehicle-to-everything (C-V2X), we urge you to remain mindful of the following issues, and not take any steps which would delay or complicate the uptake of connected car capabilities, or otherwise undo the progress made to date.

Public and private investments of over $1 billion have resulted in an industry consensus that DSRC is the most capable and cost-efficient long-range sensor available. DSRC is operable in any weather and lighting conditions, and effective even in the presence of large obstructions (i.e. has the ability to see around corners and "through" buildings). As you surely know, the U.S. Department of Transportation (DOT) continues to invest in DSRC, including three major pilot projects, utilizing Autotalks products in the Tampa, FL pilot. Similarly, while Autonomous Vehicles (AV) have captured significant public attention, and hold considerable promise for the future, whatever form AVs eventually take will necessarily incorporate DSRC technology, as well.

Years of development and testing were necessary to reach the point where DSRC was both accepted by transportation officials and ready for thoroughgoing industry adoption. In some corners, however, this deliberative and careful verification process is now being characterized as a weakness (i.e. DSRC is "stale"), rather than a testament to the reliability of a DSRC-enabled V2X backbone. In fact, DSRC V2X capabilities continue to advance. The V2X roadmap will soon expand from basic safety service ("Here-I-Am") to advanced use cases, such as sensor sharing ("after being informed of a pedestrian observed by vehicle B, vehicle A is slowing at right turn), cooperative driving ("vehicle A is slowing down to let vehicle B merge") or pedestrian protection ("vehicle detects a pedestrian using Smartphone crossing the street at night"). But to support these advanced safety use-cases, the entire 5.850-5.925 GHz band is needed. While limiting DSRC's allocation would yield additional WiFi channels at some point, we believe saving lives and improving road traffic now is a more tangible and desirable goal.

[1] Including vulnerable entities such as pedestrians and motorcycles, embedded elements such as bridges and tunnels, as well as emerging or intermittent hazards, such as roadway flooding, poor visibility, or accident activity.

Spectrum sharing prevents the consideration of C-V2X. C-V2X has fundamentally different physical layer scheme and different frame format than DSRC. The first suggested sharing scheme, “detect-and-vacate”, halts WiFi operation after detection of DSRC transmission. WiFi devices can’t detect C-V2X transmissions, hence this scheme isn’t applicable. The second suggested sharing scheme “re-channelization” depends on the ability of WiFi and DSRC to operate simultaneously in the same band, made possible since WiFi and DSRC share the same frame structure and physical layer scheme, yet this isn’t the case for the dissimilar C-V2X technology. Moreover, even if a C-V2X sharing scheme was identified, long-term testing and verification would be necessary, further delaying market uptake, rendering DSRC sharing testing irrelevant, and subjecting current drivers and passengers to unnecessary injury and death.

Autotalks lauds Toyota on its recently-announced DSRC deployment. Toyota’s courageous step will enhance roadway safety without waiting for regulation. We are confident that other car manufacturers will similarly incorporate DSRC in their production lines, and that federal, state and local transportation officials will continue to invest time and resources building DSRC into our national travel infrastructure.

As a result, we believe that federal efforts should focus on the deployment of proven existing technology – DSRC – and in expediting current DSRC testing. The bottom line is that the deployment of DSRC now will save tens of thousands of lives, and vast sums of money. [2]

yours sincerely
Onn Haran, CTO

[2] The Cost in Fatalities, Injuries and Crashes Associated with Waiting to Deploy Vehicle-to-Vehicle Communication
James R. Sayer, Carol A. C. Flannagan, Andrew J. Leslie
University of Michigan Transportation Research Institute
http://umtri.umich.edu/sites/default/files/The%20Cost%20Associated%20with%20Waiting%20to%20Deploy%20DSRC.pdf